



**UNITED STATES DEPARTMENT OF COMMERCE  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/230,012	04/19/94	SOUTHERN E	263PPTR7644U

WENDEROTH, LIND & PONACK  
SOUTHERN BUILDING  
SUITE 700  
805 15TH STREET, N.W.  
WASHINGTON DC 20005

18N2/0203

EXAMINER

MARSCHEL, A

ART UNIT	PAPER NUMBER
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1809

33

DATE MAILED: 02/03/97

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/230,012

Applicant(s)

Southern

Examiner

Ardin Marschel

Group Art Unit

1809

☒ Responsive to communication(s) filed on 11/22/96

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

- ☒ Claim(s) 42, 44-51, 54-59, and 61 is/are pending in the application.
- ~~Of the above, Claim(s)~~ 1-41, 43, 52, 53, 60, and 62 ~~is/are withdrawn from consideration.~~ have been canceled
- ☒ Claim(s) 44-48 is/are allowed.
- ☒ Claim(s) 42, 49-51, 54, 57, 59, and 61 is/are rejected.
- ☒ Claim(s) 55, 56, and 58 is/are objected to.
- ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- ☐ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

The art unit designated for this application has changed. Applicant(s) are hereby informed that future correspondence should be directed to Art Unit 1809.

Applicant's arguments; filed 11/22/96, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either newly applied or reiterated. They constitute the complete set presently being applied to the instant application.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 42, 49-51, 54, 57, 59, and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dattagupta et al. (0,235,726; ref AI) taken in view of Gingeras et al. (WO 88/01302; ref. CI).

Dattagupta et al. disclose the reverse Southern type of

hybridization analysis on solid supports including the immobilization of separate probes on solid supports in the SUMMARY OF THE INVENTION on pages 3-4. Page 9 of Dattagupta et al. disclose in lines 25-33, the covalent and noncovalent immobilization of probes with a matrix of spots cited in lines 53-58. This suggests the generic attachment of probes to solid supports but lacks specific attachment chemistry.

Gingeras et al. disclose the chemistry of attachment to a variety of supports including short probes as well as terminal attachment summarized in the abstract and throughout the disclosure.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice reverse Southern type assays with a variety of probes including a matrix of spots arrangement because Dattagupta et al. disclose the generic reverse Southern assay method and apparatus and Gingeras et al. describes various immobilization methods as given in the instant claims.

Applicant argues the above rejection based on the wording in the claims directed to the *in-situ* synthesis of the immobilized oligonucleotides. This is non-persuasive in overcoming the rejection because the claims are directed to supports with cells of oligonucleotides attached and uses thereof. Such supports with oligonucleotides attached may be prepared either by *in-situ* synthesis or by synthesis of the oligonucleotides followed by attachment. Since the apparatus claims are directed to supports

with oligonucleotides attached per se, the means of preparing them may be by whatever method is doable whether cited specifically in the claims or not. It is noted that the apparatus claims are not method claims but rather product by process claims. Since the process cited in the claims is not the only process by which the apparatus may be prepared, the process is not given patentable weight because it does not itself limit the claim scope. Applicant further argues that the *in-situ* synthesis has real significant advantages such as accurately controlling the oligonucleotides on the array to optimally control mismatch detection. This also is non-persuasive since it is apparent that the combination of references cited in support of this rejection discloses methodology and use of immobilized oligonucleotides thereof which are fully capable of producing solid support arrays with the same control of mismatch detection due to differentiating one target nucleic acid from another. Therefore, the arguments of applicant are non-persuasive in overcoming the rejection.

Claims 55, 56, and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 44-48 are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS

ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

This application is subject to the provisions of Public Law 103-465, effective June 8, 1995. Accordingly, since this application has been pending for at least two years as of June 8, 1995, taking into account any reference to an earlier filed application under 35 U.S.C. 120, 121 or 365(c), applicant, under 37 CFR 1.129(a), is entitled to have a first submission entered and considered on the merits if, prior to abandonment, the submission and the fee set forth in 37 CFR 1.17(r) are filed prior to the filing of an appeal brief under 37 CFR 1.192. Upon the timely filing of a first submission and the appropriate fee of \$ 730.00 for a large entity under 37 CFR 1.17(r), the finality of the previous Office action will be withdrawn. In view of 35 U.S.C. 132, no amendment considered as a result of payment of the fee set forth in 37 CFR 1.17(r) may introduce new matter into the disclosure of the application.

If applicant has filed multiple proposed amendments which, when entered, would conflict with one another, specific instructions for entry or non-entry of each such amendment should be provided upon payment of any fee under 37 CFR 1.17(r).

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Art Unit: 1809

Papers related to this application may be submitted to Group 1800 by facsimile transmission. Papers should be faxed to Group 1800 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 305-3014 or (703) 308-4227.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703) 308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Elliott, can be reached on (703) 308-4003

Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

February 3, 1997

*Ardin H. Marschel*  
**ARDIN H. MARSCHEL**  
**PRIMARY EXAMINER**  
**GROUP 1800**